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NEW DISCOVERIES



ALL OVER THE EARTH

Why YOUR BRAIN CELLS NEED Real EXERCISE

by WILLIAM LEE HOWARD, M.D.

We would take as good care of our brain stuff as we do of our muscles and stomach there would be far less insanity and fewer mental breakdowns. We are getting to realize the value of physical exercise and we take heed of what goes into the stomach to nourish the body and supply building material for blood. But the brain is neglected and we force its action, the mind, to work under many difficulties. The brain must have exercise as well as rest. The average man believes that his daily labor, book-keeping, banking, financing, or whatever he does for a living, is brain exercise. It is not; it is brain work. What is the difference? There is a great difference.

There Is a Vast Difference Between WORKING and EXERCISING Your BRAIN

In a man's vocation it is only a certain group of brain cells which work and develop. Among and alongside of these are millions ready to do other kind of work, and if they are allowed to remain idle they will, like unused muscles, shrink to uselessness.

It is this one-sidedness of brain work which brings on nervous and mental exhaustion, not mental strain alone. Have you not at times when in a half waking state had thoughts and ideas strange and foreign to your daily work? You commence one line of thought which suddenly sends your mind upon an entirely different track. Then it occurs to you: "How did I reach this particular thought or memory?" Gradually you travel back over the same thought line, fact for fact, thought station to thought station, and reach the origin of the mind journey.

Now this is a normal mental process. Your ideas and words have literally gone over what we call "association tracts;" cells and fibres which have been put into activity.

If we close that portion of our brain shop which has been working all day; close it absolutely as we do the

workshop or desk and take up another line of thinking, we are exercising certain groups of brain cells and resting the others. If we read on subjects which apparently have nothing to do with our vocation, soon the "association

tracts" will show us that there is nothing really useless to our daily work. We shall discover that what we thought was trivial is, indeed, of much value.

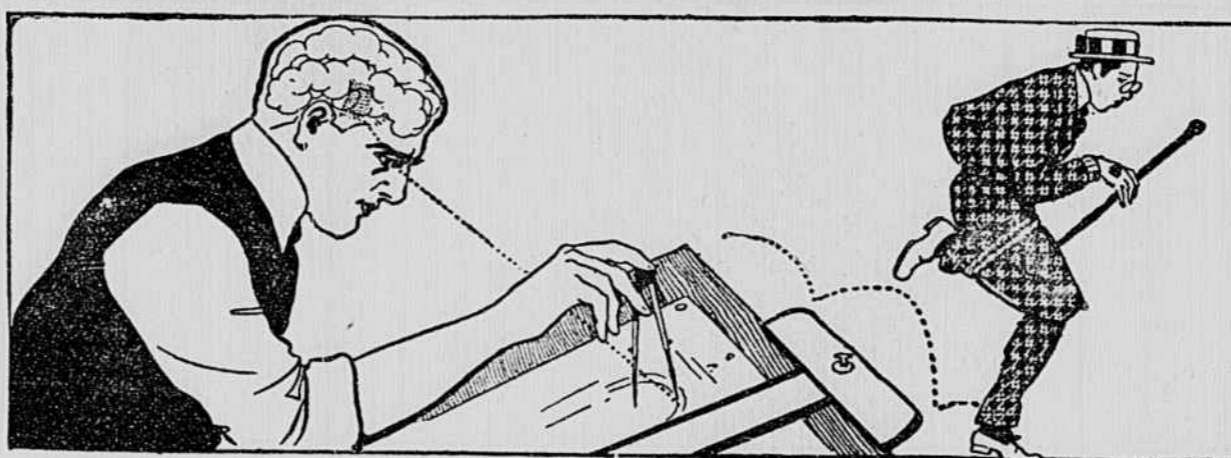
It is by such mental methods that progress is made: it is through bringing all brain stuff to work at your command that the man gets out of ruts, invents, goes ahead, keeps youthful and always has something ahead

in view. It relieves the tension of his brain, broadens his views, and really increases his efficiency.

Nobody would be so foolish as to try to run an automobile on one tire all the time and let the other three tires lie idle to grow stiff, worthless and lose their elasticity. And no one would think of trying to hobble down to business and back every day on one leg and let the muscles, nerves and blood vessels of the other leg become stiff, feeble and useless. And yet that is just what most of us do with our brains—over and over again, day in and day out we work and exhaust only one group of brain cells and let the others rust and deteriorate.

There are so many millions of brain cells, each capable of doing special work, that brain exhaustion is practically impossible for the healthy individual. But what can and does happen is exhaustion of certain groups of brain cells when the worker has not the others at his command to keep him happy and contented while the tired ones rest.

There is too much Tommy rot about "the tired business man" needing exciting drama or fizzy musical plays to rest his "tired brain." Of course, a little of this amusement does no harm, perhaps is a benefit at times, but it does not put into activity that brain material latent in every man and woman the stimulation of which leads to fame and fortune and redounds to the majesty of man.



Daily Labor, Like Book-Keeping or Drafting, Is not Brain Exercise; It Is Brain Work, and Uses Only One Set of Brain Cells. It Is as Foolish to Neglect Exercising Your Brain as It Would Be to Hobble to Your Office Every Day on One Leg.

The NERVE That Tells Us WHEN to LAUGH or CRY

HERE is one nerve in the body which may well be called the most wonderful, for it is the real index to the mental tone of the system, the actual motor of the state of mind and controller of the most important functions. This is the vagus nerve, so called because of its wandering character, giving off branches to the heart, lungs, stomach, liver and kidneys. Almost every emotion may be expressed in terms of the vagus nerve, for it shows with unerring accuracy precisely how we feel at any moment, especially if we are excited deeply moved. When we say that a man's heart is within him for fear or apprehension, it is shown by the effect of this nerve upon the heart action. If his heart beats high with hope, or he sighs for relief, it is the vagus nerve that has conducted the mental state to the heart and accelerated its action or caused that nodding action of the lungs which we call a sigh.

When we are disgusted by some sight or the smell of some food it is the vagus nerve which impels the stomach to contract and throw out its contents in act of vomiting.

When, as it well known, brings on kidney disease, it is the vagus nerve, and especially that branch going to the kidneys which under undue excitement, or strain, brings about the paralysis of the system in the performance of their functions and

ultimately causes a disease of those important sewers of the body. When they do not act the impurities are not carried off and the system soon becomes poisoned.

The latest investigators of the activity of this vagus nerve are of the opinion, basing their conclusions upon very careful study of cause and effect, that through the vagus nerve the effect of mental depression is carried to the entire circulatory and nervous system. They have found that the effect of grief, worry and anxiety, especially in elderly people, is sometimes very marked, especially in the circulation. Our common expression "taking it to heart" is explicable in the light of the action of this nerve. A noted physician reports that he examined a patient and found him suffering from a diseased heart. He had, however, shown few outward symptoms and did not know that this important organ had anything the matter with it. After he was told his condition, so that he would not excite himself in any way, and would exercise due precautions, he "went all to pieces," as we say, took to his bed, and died within a few days. The change in him was so remarkable that it is cited as a historic case, illustrating the effect of nervous depression acting through the vagus nerve.

The reverse is just as true, for hope and joy serve as active stimulants of the heart action through this nerve and often restore a person to health, even though

the tone of the system had been previously lowered a considerable degree. This action is explained by the valuable aid rendered to the system through the action of all the aids to nutrition of the vessels and the return of venous blood and lymph.

The long-continued depression of the heart's action by grief may bring about a condition of malnutrition with no very definite organic change to explain it, and such a condition is frequently noted, not only in the old, but even in the young, where it sometimes produces a predisposition to tuberculosis. This is the explanation of that condition termed "going into a decline" frequently following a shock to the nervous system, or prolonged periods of grieving. The commonest type of this effect is that of the young girl deserted by her lover. Grief depresses the circulation, through the vagus, a condition of malnutrition follows, and tuberculosis, often of the hasty type, follows.

The roots of the vagus nerve are in the medulla oblongata, at the base of the small brain or cerebellum, and explains why death follows the severing of the medulla. It controls the heart action, and if a drug such as aconite be administered, even in small doses, its effect upon this nerve is shown in slowing the action of the heart and decreasing the blood pressure. In larger doses it paralyzes the ends of the vagus in the heart, so that the pulse becomes suddenly very rapid and at the same time irregular.

Put WARNING PLACARDS Near All POLLUTED WATER

TO a great many people, perhaps to still the majority of people, water is water, and that is all. Especially is this view held where the water is piped and comes from a faucet.

All that is piped is by no means fit to drink. In a great many cities and towns, and even villages, there are fire supplies water-piped from some bog or such place, this water to be used only in case of fire, and to drink such water would be exceedingly dangerous.

Yet, let a lot of working men on a hot day happen near such a place, and unthinkingly they would go to the faucet and drink from it. To avoid such dangerous practices, the Board of Health of Springfield, Mass., has passed an ordinance, demanding that all such places be placarded. Every faucet, hydrant or outlet for water that is not strictly up to drinking purity and passed upon by the Board of Health shall bear a large placard printed in brilliant red letters, saying in effect: "DANGER—This water is unfit to drink!"

In this way it is hoped to prevent people

from drinking the contaminated water and reduce the mortality from typhoid fever and kindred enteric diseases. The ordinance, in fact, goes a step further and requires that pails and similar utensils for containing the river water be marked with the red danger-sign. As for the placards at the faucets, they bear the legend: "Warning! Polluted Water," in letters at least one inch in height, and are inscribed in several languages.

Duplicate systems of water supply, one for domestic and the other for industrial use, are not uncommon in cities where there are large numbers of mills and factories, as at Springfield. That city is supplied with filtered water for domestic use, but it is difficult to make ignorant millhands, many of them foreigners, appreciate the danger of using the impure river water by telling them of the risks they take. The painting and placarding of the faucets should act as a much-needed deterrent in the promiscuous use of such water, and factory owners are certainly under a moral obligation to place a safe supply of drinking water within convenient reach of their employees. No man will drink impure water from choice, unless the pure supply is inconveniently located.

BRASS FINGER BOWLS Found to Be UNSANITARY

HE Health Department of the City of Buffalo is making an effort to prohibit the use of brass finger bowls in that city. Of course, the Health Board officials cannot prevent their use in restaurants, but in public eating places they should be prohibited.

Health Commissioner Fronczak declares while the use of finger bowls is to be prohibited, they should always be of glass, or porcelain, because the brass bowls, which cannot be thoroughly cleaned, are several reasons for this. In the place, these brass bowls are generally used or stamped or hand-tooled with

various designs that leaves hundreds of tiny crevices in them and in these places germs can get a foothold, or whatever it is they hang on with.

Again, the brass bowls are opaque and one cannot tell by looking into them whether they are quite clean or not. That is why the glass bowls are preferable to either china or porcelain, because with plain glass finger bowls one can tell by looking at them in the right light whether they have been thoroughly cleaned.

If the glass bowls are thoroughly rinsed in hot water they will be safe enough, the Buffalo health authorities maintain, but they propose to wage war against all public eating places that insist upon the use of the brass bowls.

To EAT as SLOWLY or RAPIDLY AS YOU LIKE Is Best

THERE is just one kind of person who is willing to chew each morsel of food thirty-two times before he swallows it, and that kind of person is a hypochondriac, always thinking there is something wrong with him. "Fletcherizing" one's food, as a prominent Atlanta doctor points out, is a piece of nonsense for the great majority of people, although in a certain number whose digestive tract works slowly, it may be a good thing. Fair teeth and an ordinary amount of chewing will provide the utmost of the duty required by the mouth. The stomach and the digestive tract will take care of the rest.

In order to understand why one can stand at a lunch counter and bolt a meal in three or four minutes without any harm to himself, it is well to remember that the essence of the digestion which is performed by the saliva is the transformation of starch into sugar by the action of the ptyalin; but that is by no means confined to the salivary juices alone. As for the protein elements—which are much harder of digestion—they are not affected by the salivary acids at all. The

pepsin and the hydrochloric acid in the stomach and the trypsin in the intestine will change them into what is needed for the nutrition of the body. The pancreas, moreover, will see to it that starchy material does not get by.

It is really the business of the sense of taste to telegraph to the various organs immediately affected by food that some toothsome morsels are on their way, warning the stomach to be ready for work, and if the food be chewed too long and not swallowed, the stomach and intestines will rebel. Chewing, too, is a voluntary act, requiring the exercise of the will—particularly exaggerated long chewing—and this has the effect of making the diner think of his dining rather than of his dinner; or, as Dr. Niles phrases it, "causing him to have every waking thought short-circuited on his stomach."

There is a natural speed in eating, which differs with almost every person. The alert, vigorous business man usually is rapid in all his actions, and his quickness with his external machinery is an index to

the promptness of the machinery within. Why should it be expected that his digestive workings are lethargic? As a matter of fact, they are not, and such a man usually feels far worse after a long banquet which he is compelled to attend than after his quick lunch, snatched in the press of a hustling business day. On the other hand, a man or woman of indolent temperament and habits of life should never try to eat fast, for the digestive conditions are probably regulated to much the same speed as most of his or her other actions, and fast eating would start various forms of indigestion and dyspepsia. The flesh-eating animals—who usually bolt their food—seem to suffer but little from dyspepsia. It is bad, of course, to bolt food more rapidly than the stomach can take care of it, but there is less danger in a quick lunch than in a fanciful mastication-fest over every mouthful of food.

Dr. Harvey L. Wiley, the recognized food expert, says meat should not be chewed except to break it into convenient size for swallowing, and he holds that "Fletcherizing" makes meat more difficult to digest. He points out that no carnivorous animal, those that eat meat exclusively, chew the meat, but bolt it rapidly, and such animals certainly have strong and healthy stomachs.

Why NAILS Should Be PLANTED in the Garden

IT few persons know the value of old nails. They are worth more than new ones, when used for certain purposes. All forms of vegetation more or less iron, and unless this is already in the soil or supplied, the tree or plant will be in need of one that can easily be supplied by the use of old nails.

Kinds of house plants soon exhaust the soil in which they stand and grow for months, and when others are used the iron is apt to be overlooked. A few rusty nails in the earth about the plants, or press the nails down among the roots and the iron will soon dissolve the iron to a certain extent and will be carried to the plant through the roots. Fruit trees need more or less iron. Trees that on city or town lots are apt to exhaust the soil in the roots, and when this occurs the results are unsatisfactory as when the soil has a larger supply of iron to draw from. Iron may be provided in many ways by the use of rusty nails. Old nails that are rusty will soon become so if allowed to remain outdoors a short time, or if buried about the roots of a tree. A dozen nails buried in the earth at a dozen points about the ground a short distance from the tree supply all the iron it needs for several months. It will take something like a gross of nails. They are all sizes.

Old trees that have attained an age that should be given some iron by driving a number of nails into the body of the tree. On twenty-five to one hundred nails of different sizes may be driven into a large fruit tree without harm or injury. Care should be taken not to strike bark at the point where the nails are driven after all has been driven in. The nails should be pretty distributed over the trunk of the tree.

Old nails mixed with the earth in making a bed will assist greatly in producing a wealth of foliage, as well as more brilliant colors in the

A New SANITARY MILK-DIPPING Device

HEALTH OFFICIALS have long waged war on the old-style method of dipping milk from a tank to sell to the retail trade because of the many dangers that result from foreign matter getting into the milk and resulting disease.

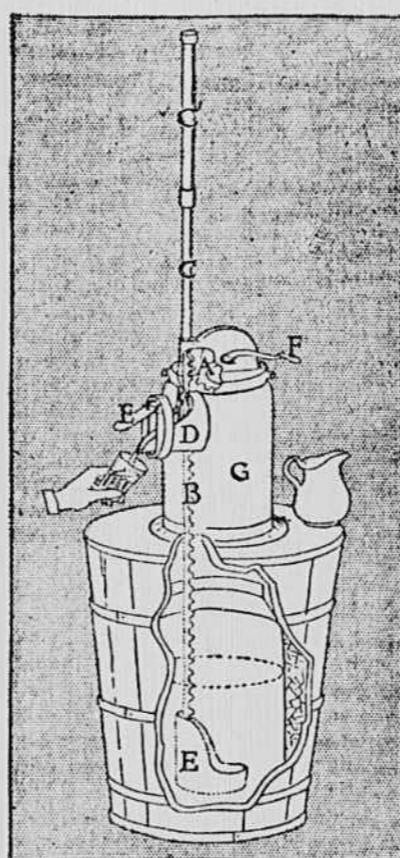
In many cities the dipping tanks are not allowed, and the retail trade is supplied by the bottle; but this, it is claimed, works hardships among many because an extra price has to be charged for the milk, owing to the alleged extra cost of bottling, loss and breakage of bottles, etc.

A New York man has been working four years upon a device which he calls a "Sanitary Milk Dipping and Fluid Vending Apparatus." The inventor now holds seven patents, and claims to have already greatly interested the New York health officials in it.

His claims are many and include, first, complete sanitation, as the milk is not allowed to come in contact with the outside air from the time the retailer starts selling it until the great can is emptied; second, accurate measurement, economy and saving of time and trouble in the selling.

His patent consists of a wooden tub, such as is frequently used in dairies to keep the milk cans in. The ordinary forty-quart can of milk, just as it comes from the producers, is placed in this tub, packed with ice. The vending device fits on the tub cover in an airtight manner and everything is in readiness to sell the milk.

The cog-wheel at (A) lifts and lowers the ratchet (B), to which is attached the dipper holding the milk. This ratchet rises in the



Dust-Proof Milk-Dipping Apparatus. (See Description.)

dust-proof telescopic tubing (C) and (C'). When the machine is at rest the dipper is in the position seen at (H); when the crank at (F) is given a couple of revolutions, the dipper, filled with milk, is hoisted until in position seen at (D). The dipper is automatically tilted and the dust-proof door at (E) is opened, allowing the milk to run out into the drinking glass, milk bottle or whatever the customer brings to take it away in. The casing over all (G) is of glass, so the purchaser may see the milk brought up and note the cleanliness of the mechanism.

The mechanism is all made of 70 per cent pure nickel and will not rust or corrode, being absolutely hygienic. For the ordinary small store a vendor with a pint dipper will serve, although the bigger stores may have several of these machines with various sized dippers. The inventor expects to have this machine used for soft drinks at fairs and in stores, making it much safer and freer from possible germs than under the present method of selling, but just now he is devoting all his time to the milk problem, and is anxious to market his device.

When the can is empty the top can be removed and another can set in. After the dipper is emptied it goes back into position automatically and keeps the milk stirred up, assuring the customers of a fair amount of cream, whether they buy the first or last pint in the can. The mechanism comes apart easily for cleaning, and can be sterilized every morning without trouble or delay.

The work of sterilization would not take more than ten minutes' time, and absolute cleanliness would be assured.

CARPETS Should Be BEATEN Out of Town

THOUSANDS of cases of illness are caused in cities and towns where carpets are beaten and the wind scatters the germs broadcast among the people living within reach of the deadly pests.

Nothing harbors these disease germs as much as a carpet that has lain on the floor of a room where all sorts of diseases and conditions of life have existed, and when the rugs or carpets are taken to the common, an open lot, or the park to be beaten, the disease germs are liberated and scattered all over the place.

The wind will carry the dust from a dirty carpet for several blocks, and the germs are lighter and more easily carried even on what seems to be a calm atmosphere.

Persons passing or residing near a carpet cleaning resort can smell and taste the dust from the filthy fibre as it is pounded by the laborer. The lips and nostrils are moist, and the disease germs can collect and be retained by the mouth and nose until they have a chance to enter the system.

Instances are recorded where contagious diseases were spread throughout whole blocks by carpet beating. Persons with a sore place on face or hand are in grave danger when near carpet that is being cleaned, as there is danger of blood poisoning from the matter that is apt to lodge in the affected parts.

Human hair is a hiding place for germs, and when the dust from a dirty carpet is blown among the people and into open doors and windows, the germs lodge in the hair and remain until they get in their deadly work.

Carpets and rugs should be taken to an isolated spot in the country where no human habitation is near, and where grasses and trees will, to a considerable degree, catch the dust and germs.

The life of a germ is short when it falls into the moist growth or comes in contact with the earth where some kind of insect is apt to pick it up.

An ideal spot for carpet cleaning would be on a small island where the dust would be carried over and be deposited in the water that surrounded the tract of land. It should be at a point where the dust could not reach dwellings or passing vessels.